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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/587,187	07/25/2006	Kazuhiro Sugie	043888-0493	8233

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EXAMINER	
HAN, KWANG S	

ART UNIT	PAPER NUMBER
1795	

MAIL DATE	DELIVERY MODE
02/17/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/587,187	SUGIE ET AL.	
	Examiner	Art Unit	
	Kwang Han	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 July 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/25/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

LEAD ACID BATTERY

Examiner: K. Han SN: 10/587,187 Art Unit: 1795 February 17, 2009

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

1. The information disclosure statement filed July 25, 2006 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the JP 3102000 document (no copy present) referred to therein has not been considered.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yonemura (JP 2003-346888, machine translation) in view of Tokunaga et al. (US 5128218)

Regarding claim 1, Yonemura is directed towards a lead storage battery [Abstract] comprised of the following:

- a plurality of negative electrode plates (Drawing 1) each with a negative electrode grid (6), having a handle part (5, tab), and a negative electrode active material [0014] retained by the grid,
- a plurality of positive electrode plates each with a positive electrode grid, having a handle part (tab), and a positive electrode active material retained by the grid [Abstract] (Drawing 1),
- a plurality of separators (3) separating the positive electrode plate and the negative electrode plate,

- a positive electrode connecting member (10, 8) comprising a positive electrode shelf (8, positive electrode strap) to which the handle part (tabs) of each positive electrode plate of the electrode plate pack is connected (Drawing 1),
- a positive electrode connecting body (10) provided at the positive electrode shelf,
- a negative electrode connecting member (7, 9) comprising a negative electrode strap (7) to which the handle part (tab) of each negative electrode plate of the electrode plate pack is connected (Drawing 1), and
- a negative electrode connecting body (9) provided at the negative electrode strap (Drawing 1) [0010-0020],
- the positive electrode grid, the negative electrode grid, the positive electrode connective member, and the negative electrode connecting member comprise a Pb-alloy including Ca or Sn [0012-0013], and
- a negative electrode active material layer including 0.001 to 0.1 mass % of Sb [0006-0007].

It has been held that where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990) (MPEP 2144.05). Yonemura is silent towards the positive electrode grid having a lead alloy layer including 0.01 to 0.2 parts by weight of Sb of a positive electrode active material.

Tokunaga teaches a lead acid battery with a positive grid that is an antimony containing lead alloy in an amount of 0.7 to 2.0 wt. % (Column 4, Lines 14-24) for the benefit of increased performance life (Column 9, Lines 12-16). It would have been obvious to one of ordinary skill in the art at the time of the invention to have a positive active material grid using an antimony containing lead alloy in the amount of 0.7 to 2.0 wt. % because Tokunaga teaches it extends the performance life of the positive grid in comparison to non-antimony containing alloy. It has been held that where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990) (MPEP 2144.05).

Regarding claim 3, Yonemura discloses a negative electrode active material layer including 0.001 to 0.1 weight % of Sb [0006-0007]. It has been held that where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990) (MPEP 2144.05)

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yonemura in view of Tokunaga et al. as applied to claim 1 above, and further in view of Venuto (US 3723182).

Regarding claim 2, the teachings of Yonemura and Tokunaga as described above are herein incorporated. Yonemura and Tokunaga are silent towards the positive active material having antimony content.

Venuto teaches a lead acid battery with the positive electrode active material containing antimony from as little as 0.005% to an optimum maximum of 1% (Column 3, Lines 21-29) because the antimony provides strength and hardness to the lead but at a low enough content to not poison the negative plates. It would have been obvious to one of ordinary skill in the art to include a small amount of antimony in the positive electrode active material because Venuto teaches it provides strength and hardness to the lead but at a low enough concentration to not poison the negative plates.

7. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yonemura and Tokunaga as applied to claim 1 above, and further in view of Ohba et al. (US 5989750).

Regarding claims 4 and 5, the teachings of Yonemura and Tokunaga as discussed above are herein incorporated. Yonemura discloses a separator comprised of polyethylene [0018] but is silent towards the separator being comprised of fibers. Tokunaga discloses a synthetic separator but teaches any separator can be used which meets minimum thickness, porosity and electrical resistance properties (Column 5, Lines 12-15).

Ohba teaches a separator for a lead-acid battery comprised of fibers having resistance to acid and where the fiber is a glass fiber and a synthetic fiber (Column 3, Line 9-Column 4, Line15). It would have been obvious to one of ordinary skill in the art at the time of the invention to use a separator in a lead acid battery comprised of acid

resisting fiber of both glass and synthetic material because Ohba teaches it provides for a separator which has properties of excellent acid and oxidation resistance.

Double Patenting

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 1 and 3 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 10/585078 (hereinafter referred to as Sugie '078) in view of Yonemura and Tokunaga et al.

Claim 1 of Sugie '078 recite all the limitations of the instant claims 1 and 3 except that of the negative electrode active material layer including 0.0001 to (0.003 or 0.002)

parts by weight of Sb and the positive electrode grid having a lead alloy layer including 0.01 to 0.2 parts by weight of Sb.

Yonemura discloses a negative electrode active material layer including 0.001 to 0.1 weight % of Sb [0006-0007]. It has been held that where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990) (MPEP 2144.05) It would have been obvious to one of ordinary skill in the art at the time of the invention to have a negative electrode active material layer to include Sb in that range because Yonemura teaches it provides for a battery with corrosion suppression properties.

Tokunaga teaches a lead acid battery with a positive grid that is an antimony containing lead alloy in an amount of 0.7 to 2.0 wt. % (Column 4, Lines 14-24) for the benefit of increased performance life (Column 9, Lines 12-16). It would have been obvious to one of ordinary skill in the art at the time of the invention to have a positive active material grid using an antimony containing lead alloy in the amount of 0.7 to 2.0 wt. % because Tokunaga teaches it extends the performance life of the positive grid in comparison to non-antimony containing alloy. It has been held that where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990) (MPEP 2144.05).

This is a provisional obviousness-type double patenting rejection.

10. Claims 1 and 3 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 10/587186 (hereinafter referred to as Sugie '186) in view of Yonemura and Tokunaga et al.

Claim 1 of Sugie '186 recite all the limitations of the instant claims 1 and 3 except that of the negative electrode active material layer including 0.0001 to (0.003 or 0.002) parts by weight of Sb and the positive electrode grid having a lead alloy layer including 0.01 to 0.2 parts by weight of Sb.

Yonemura discloses a negative electrode active material layer including 0.001 to 0.1 weight % of Sb [0006-0007]. It has been held that where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990) (MPEP 2144.05) It would have been obvious to one of ordinary skill in the art at the time of the invention to have a negative electrode active material layer to include Sb in that range because Yonemura teaches it provides for a battery with corrosion suppression properties.

Tokunaga teaches a lead acid battery with a positive grid that is an antimony containing lead alloy in an amount of 0.7 to 2.0 wt. % (Column 4, Lines 14-24) for the benefit of increased performance life (Column 9, Lines 12-16). It would have been obvious to one of ordinary skill in the art at the time of the invention to have a positive active material grid using an antimony containing lead alloy in the amount of 0.7 to 2.0 wt. % because Tokunaga teaches it extends the performance life of the positive grid in

comparison to non-antimony containing alloy. It has been held that where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990) (MPEP 2144.05).

This is a provisional obviousness-type double patenting rejection.

Contact/Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kwang Han whose telephone number is (571) 270-5264. The examiner can normally be reached on Monday through Friday 8:00am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on (571) 272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/K. H./
Examiner, Art Unit 1795

/Dah-Wei D. Yuan/
Supervisory Patent Examiner, Art Unit 1795